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Vice President, Government Relations

October 20, 2017

VIA EMAIL TO: ups@energystar.gov

Mr. Ryan Fogle
Environmental Protection Agency
ENERGY STAR UPS Program Manager
1200 Penn. Ave NW 6202J
Washington, DC 20460

**NEMA Comments on ENERGY STAR® Program Uninterruptible Power Supplies (UPS)
Draft Specification 2.0**

Dear Mr. Fogle,

As the leading trade association representing the manufacturers of electrical and medical imaging equipment, the National Electrical Manufacturers Association (NEMA) provides the attached comments on the Environmental Protection Agency's ENERGY STAR® Uninterruptible Power Supplies (UPS) Specification 2.0 Draft 2. These comments are submitted on behalf of NEMA Power Electronics Division Member companies.

NEMA, founded in 1926 and headquartered in Arlington, Virginia, represents 350 electrical and medical imaging manufacturers. Our combined industries account for more than 350,000 American jobs and more than 6,500 facilities across the U.S. Domestic production exceeds \$117 billion per year. Please find our detailed comments attached.

Our Member companies count on your careful consideration and we look forward to an outcome that meets their expectations. If you have any questions on these comments, please contact Alex Boesenberg of NEMA at 703-841-3268 or alex.boesenberg@nema.org.

Sincerely,

A handwritten signature in black ink that reads "Kyle Pitsor". The signature is written in a cursive, flowing style.

Kyle Pitsor
Vice President, Government Relations

NEMA Comments on ENERGY STAR® Uninterruptible Power Supplies (UPS) Specification 2.0 Draft 2

General Comments:

NEMA notes EPA's efforts to accommodate many of our comments to the Draft 1 version of the specification. EPA's support of industry concerns is evidenced by these actions. We seek similar further support from EPA in moving this specification forward.

1. We continue to respect EPA's obligation to revisit the UPS program, owing to the length that the V1 specification has been in use. However, the efficiency levels for VFD and VI products as proposed are still too high. The most likely effect of the proposed energy efficiency levels is industry members will limit or withdraw their support for the ENERGY STAR® program for these products for economic reasons.
2. NEMA supports the Department of Energy (DOE) concluding their rulemaking for UPS products, which itself will have non-trivial economic impacts on the UPS industry sector that EPA should not ignore. EPA's decision to change the ENERGY STAR® UPS program in parallel to changes in DOE's standards must be carried out in such a way as to minimize cumulative burden on the market.
3. As viewed in the scatter plots, the proposed efficiency levels for VI and VFD products will exclude all but a few products from participation. It is apparent that EPA and its analysts believe that products whose performance barely meets or just exceeds proposed performance levels count as passing. This is an error of judgement. Manufacturers, facing disqualification and other negative economic impacts for a verification test, must account for manufacturing variation and abandon or redesign products whose performance falls at or near the proposed performance levels. Examples follow:
 - a. Looking at the VFD scatter plot, only four products will pass the proposed efficiency levels. This is hardly a robust catalog offering.
 - b. Looking at the proposed VI scatter plot, only three products will pass the proposed efficiency levels.
 - c. EPA cannot justify these proposals based on the scant product availability estimates evidenced in the scatter plots of today's qualified products. EPA also cannot assume that industry will make additional product redesign investments on top of those mandated by the DOE rulemaking just to maintain a reasonable variety of product offerings in the ENERGY STAR® program.
 - d. If EPA sets efficiency levels for VFD and VI products as proposed, the most likely effect is that consumers will experience significant reduction or elimination of choices in multiple power ranges. The overall impact will be that no ENERGY STAR® UPS will be sold or that high-power products will be used for low-power loads, reducing or eliminating energy savings estimates.
4. To mitigate cumulative burden on the UPS industry sector and its consumers, and allow for more reasonable energy savings, NEMA proposes EPA either modify its analytical assumptions to lower the proposed requirements to allow an additional 0.5% margin, thus allowing "on or near" products to actually be maintained in the product catalog, i.e. actually pass. Alternatively, keeping current analytical assumptions the same, EPA could adjust the VFD and VI product efficiency requirements to allow the top 20% of the market based upon the data shared during the webinar held on 04 October 2017. Either path would allow better product offering without forcing significant product redesign burdens on top of those mandated by DOE.
5. Setting energy efficiency for the ENERGY STAR® UPS program at more feasible levels will also allow for perhaps another revision to the program, rather than a near-

guaranteed sunset in the near future due to reduced participation (product offering) in the program.

6. In view of the uncertainty of when DOE will conclude and publish the UPS Standards rulemaking, an alternate approach would be for EPA to set UPS V2 ENERGY STAR® levels at 25% of the market, followed by an update of the program when the DOE's rulemaking is concluded and Federal minimum energy efficiency levels are clearly identified and their implementation date is established.

Specific Comments to the Proposed Specification:

7. Lines 170 and 171, Clause 3.1.1: Consistency between DOE's mandatory regulations¹ and EPA's voluntary requirements is required by law, and should be pursued more thoroughly. Differences between the new DOE UPS test procedures and EPA's can be improved upon. To that end, EPA should change the sentence in this clause to read "All calculations shall be carried out with the actual measured values rounded to the third decimal place."²
8. Lines 174 thru 176, Clause 3.1.3: Again, consistency between DOE's mandatory regulations and EPA's voluntary should be pursued more thoroughly. In the case of this clause, EPA requirements should be aligned with DOE's so that manufacturers are not conducting different levels of computations based upon the size of the UPS being tested. Change the sentence to read "For all UPS units the calculated efficiency values shall be rounded to one-tenth of a percentage point." (See footnote 2 citation.)

Specific Comments to the Proposed Test Method:

9. Lines 29-52: NEMA is concerned that EPA does not clearly identify a high-voltage DC-output or a low-voltage DC-output UPS, and so it is not clear where the ATIS test procedures or IEC Standard 62040-5-3 Annex F are the appropriate test methods. NEMA recommends the IEC test procedure be used for output voltages above 100VDC.
10. Line 121, Clause 3 G: NEMA appreciates the proposed changes to the document in Draft 2 which would widen the window for humidity, considering this environmental parameter does not impact efficiency. However, the proposed range is unrealistic with respect to proper product operation. NEMA proposes the sentence be changed to "Relative Humidity: Testing may occur at any relative humidity within the range specified by the manufacturer." The phrase "within the range specified by the manufacture" has become a common term in DOE test procedures, and can be found in several instances in the referenced UPS test procedure in footnote 1.

¹ <https://www.regulations.gov/document?D=EERE-2016-BT-TP-0018-0010>

² See 81FR Nr238 p89816 Para III.H.